

REVIEW ARTICLE

Understanding suicide among indigenous adolescents: a review using the PRECEDE model

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Abstract

Aim—To use the available literature to identify the causes of suicide among indigenous adolescents.

Method—The PRECEDE model provided a framework to organize the material and identify the areas where relatively little research had been reported.

Results—The epidemiological diagnosis showed that suicide was greater in indigenous than non-indigenous populations and particularly high among adolescent males. Environments of native persons are characterized by remoteness, poverty, cultural displacement, and family disintegration. The educational and organizational diagnosis identified predisposing factors reflecting the social environments previously identified, the enabling factors of televised suicides, and firearm and alcohol availability, in conjunction with an absence of positive expectations. Finally the administrative and policy diagnosis identified a piecemeal, short term perspective, often lacking cultural sensitivity. Although there was more literature from the United States than from Canada, Australia or New Zealand, the pictures emerging were consistent, with problems being identified across continents. Literature was more abundant in relation to the epidemiological, environmental, and educational/organizational diagnoses than in relation to policy and administration.

Conclusion—The increased suicide rates among indigenous adolescents were not a product of their native origins, but of the social milieu in which these people generally found themselves.

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Keywords: suicide; indigenous adolescents; PRECEDE model.

Most reviews of intentional injuries in aboriginal populations have focused on specific groups such as the Navajo Indians,¹ Hopi Indians,² or Australian Aboriginals.³ Some focus more specifically on suicide among American Indian adolescents,⁴ or on one aspect of the broader problems underlying intentional injury, such as epidemiological analyses,⁵ alcohol abuse,⁶ or drug abuse.⁷ A few have addressed interventions related to specific problems. However, there has been

little systematic attempt to provide an overview of the literature pertaining to suicide among indigenous adolescents. These people share the common characteristic of being young members of a minority culture which predated the arrival of the Anglo-Saxon population in their homeland. Although native to different continents, they are likely to share common concerns. An integrative analysis examining data from across different populations facilitates the identification of common themes.⁸

The aim of this paper is to integrate the available literature, organizing it within a planning and evaluation framework. The use of this framework facilitates the identification of areas where there has been limited research. The primary focus of the paper is on native adolescents—the group that is most likely to commit suicide. The review aims to provide an overview of relevant issues and to identify those needing further attention, acknowledging limitations of generalizability.

Definitions

Suicide occurs when an individual takes his/her own life—it is literally self murder.⁹ Parasuicide involves a person giving the impression of attempting to take his/her own life. The term 'parasuicide' is used in preference to the term 'attempted suicide', as many researchers believe that the intention of a parasuicide is not always to take their life, but often to make a plea for help.¹⁰ In some cases, identification of suicides among aboriginal populations may be problematic.

The PRECEDE-PROCEED model

PRECEDE-PROCEED¹¹ is a conceptual model for planning health education and health promotion programs and policies (see figure). The PRECEDE model provides a well tested means of articulating a program plan and rationale; and a means of documenting a systematic, step-by-step approach to planning, implementing, and evaluating suicide related programs and policies.

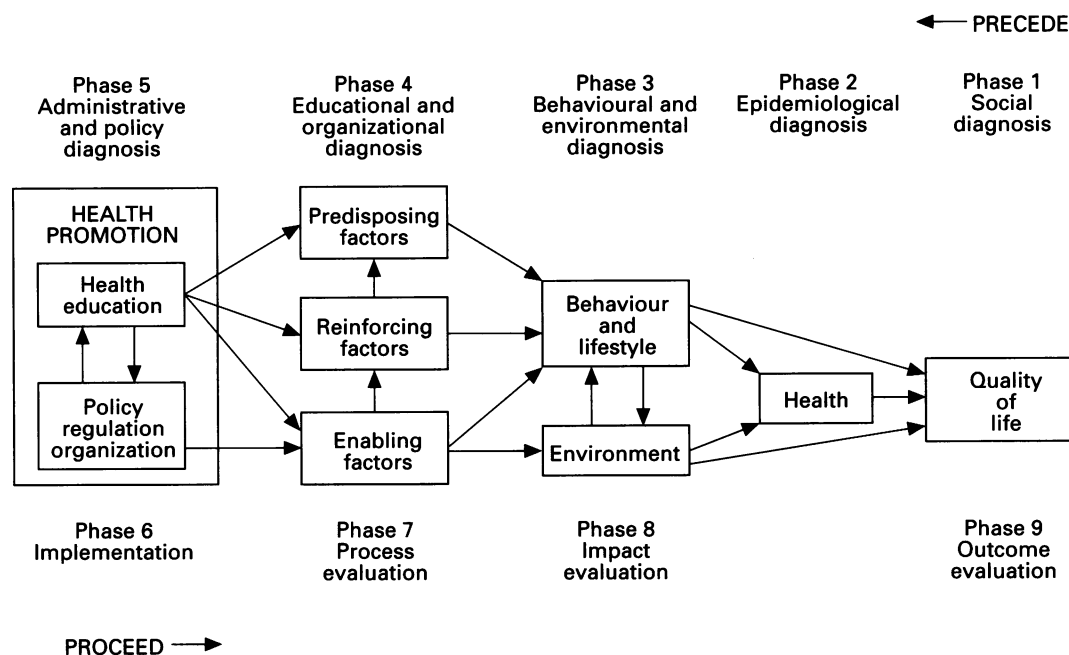
The PRECEDE provides a framework within which to identify and address the factors underlying any health related problem. The PRECEDE part of the model is read from right to left, starting with the quality of life, while the PROCEED part of the model is read from left to right. PRECEDE deals with diagnosis of the problem and development of a program plan, while PROCEED is concerned with program

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PRECEDE-PROCEED MODEL



The PRECEDE-PROCEED model. Reproduced, with permission, from Health Promotion Planning: An Educational and Environmental Approach by L. Green and M. Kreuter, published by the Mayfield Publishing Company, 1991.

implementation and evaluation. The PRECEDE part of the PRECEDE-PROCEED model was selected as the organizing framework for this review. The model has been widely applied, with over 500 published applications in the literature.¹²⁻¹⁸ It was developed in the 1970s in a series of clinical and field experiments at Johns Hopkins University, then used in the development of the health promotion objectives for the nation in the United States, the Canadian Health Promotion Survey, and other national and regional programs. It was compared statistically in a prospective study of change in health behaviours with several other behavioural models and was found to account for a larger proportion of the variance in the behaviours than the other models, including Azjen and Fishbein's theory of reasoned action¹⁹ and the health belief model.^{20, 21} It has been applied in injury control¹² and in suicidology.²²

In brief, the model suggests that the initial focus should be on social diagnosis, or quality of life, of the people who are the focus of the analysis. At stage two, the epidemiological diagnosis assesses the incidence of the problem (suicide) to establish the scope of the mortality and morbidity and to identify segments of the population where the problem is greatest. The behavioural and environmental diagnosis is concerned with identifying aspects of the physical, cultural, and socioeconomic environments and lifestyle factors that might contribute to suicide. Stage four is concerned with the educational and organizational factors that predispose certain individuals to consider suicide, the elements in the social environment that reinforce these behaviours, and those elements that enable the development of these predispositions. At stage five, the focus is on

administrative and policy issues that might inhibit or facilitate programs—services and conditions needed to bring about changes in the lifestyle or environmental factors. Once all of these analyses have been completed, and the essential changes required to influence suicide have been identified for a specific population, interventions can be implemented.

Situational analysis and social diagnosis

The first phase of the model involves a situational analysis and social diagnosis. The situational analysis is used to describe the demographic, social, economic, and environmental conditions in a particular community. The social diagnosis phase of the model focuses on social, economic, and environmental costs of health problems and their consequent impact on quality of life. The identification of specific health problems or behaviours (for example, suicide) as a concern or quality of life issue provides the motivation for change through a programmed intervention or action by community members, groups, or organizations. Data on suicide rates examined in an epidemiological diagnosis must be viewed within the context of quality life concerns for their citizens and consider the social, political, and environmental contexts and the living conditions of residents.

Epidemiological diagnosis

The purpose of the epidemiological diagnosis is ultimately to use inferences from available or estimated data to prevent disease and promote health and wellbeing. Community members (aided by researchers) should examine the available data or evidence on the prevalence

and distribution of mortality, morbidity, and related health outcomes. They should also examine the relationship of suicide to issues raised in the social diagnosis of their community. Long term objectives for suicide related programs and policies should flow from these first two phases.

The epidemiological diagnosis has *three purposes*: it provides empirical support for addressing a priority health problem (for example, suicide); it illustrates the magnitude of specific health problems; and finally, it results in the specification of concrete health objectives. The epidemiological diagnosis also consists of *three phases*: assessing the prevalence, incidence, and distribution of data on identified health problems; comparison of identified health issues or public health problems; and the setting of health objectives.

The population of Canadian Registered Indians, Australian Aborigines, and New Zealand Maoris are similar, being 251 000, 228 000, and 296 000 respectively whereas the American Indian population is 1.3 million. In each case, the populations are relatively young with at least 50% being less than 25 years and only 5% older than 65 years.⁸

Suicide rates for American Indians are 1.5 to 1.7 times greater than those for the nation. Statistics comparing suicide rates among Native American tribes with those of the general population draw inconsistent conclusions because the global rates mask the great variability among tribes.²³⁻²⁵ Whereas the suicide rate of 11.8 per 100 000 among the Navajo is close to the national average, rates are as low as eight per 100 000 on some reservations and as high as 43.3 per 100 000 among the Apache.^{4 26-28}

The suicide rate of indigenous Canadians has been shown to be three times higher than in the general population.²⁹ In British Columbia it is 13.5 per 100 000; while for Status Indians in British Columbia it is 48.8 per 100 000.³⁰

There has been a threefold increase among adolescents.³¹ For example, for American Indians aged 10-14 years, the suicide rate is 2.8 times the national rate, for 15-19 years it is 2.4 times the national rate, and for 20-24 years it is 2.3 times the national rate. British Columbia statistics for 1989 show that for the total population there were 412 suicides of which 20% occurred in persons under the age of 25 years; for Status Indians there were 36 suicides of which 42% occurred among persons under 25.³⁰

On a Hopi Indian reservation 80% of suicides occurred among those aged 15-24 years.² For New Zealand Maoris, the suicide rate for males aged 15-24 peaked in 1989 at 49.0 per 100 000 and for females peaked in 1986 at 17.3.³² Similar patterns occur among the Australian Aborigines,³³⁻⁴⁰ and indigenous people in the Northwest Territories.⁴¹ Native suicide rates among the 15-24 year age group are increasing at a faster rate than any other age group.²³

The different age distributions in indigenous and non-indigenous populations partly explain the apparently higher suicide rates among

native people when statistics are not age adjusted. Not only are suicides concentrated among the younger age groups in these populations, but a higher proportion of the population falls into this age group. For example, the average age of the American population is 29.5 years, while the average age of the Native Indian population is 17.3 years.⁴ However, even when age adjusted rates are considered, suicides among indigenous persons remain consistently higher than those among non-indigenous persons, especially among males aged 15-24 years.⁴²

Suicide is more common among males than among females. For example, in British Columbia there are clear sex differences, with a male suicide rate of 20.8 per 100 000 and a female rate of 6.4.³⁰ Males aged 15-34 accounted for 64% of all Native American suicides from 1979-92.⁴³ These sex differences are also apparent in localized studies.⁴⁴ A study of adolescent suicides in Newfoundland and Labrador showed that males were five times more likely to commit suicide than females.⁴⁵ However, the disparity between male and female suicide rates may decline with more women entering the workforce, as suicide among Native American women positively correlates with the percentage of women in the workforce.^{46 47}

For each suicide, there are between 50 and 150 parasuicides.^{31 48} It has been suggested that as many as 15% to 17% of indigenous high school students^{49 50} have made at least one suicide attempt and suicidal ideation is significantly higher among indigenous than non-indigenous adolescents. Suicidal ideation and parasuicide are frequently precursors to suicide.⁵¹⁻⁵⁴

Reported suicide rates may be an underestimate of the true incidence of suicide due to misclassification: (1) many deaths which the medical examiner classifies as motor accidents may be suicides^{28 55}; (2) many deaths classified as homicide may be homicide induced suicides; (3) suicides among natives may be under-reported due to cultural and religious taboos²; and (4) medical files are often incomplete, not stating the cause of death in cases that may be suicides. It has been estimated that under-reporting could be as great as 58%.^{45 56-58}

Thus, there is extensive epidemiological data documenting the numbers of suicides nationally and in small local areas. Although there is considerable variability across tribes or sub-cultural groups, there is a consistency across continents indicating that suicide rates are higher among indigenous than non-indigenous persons, especially among male adolescents.

Behavioural and environmental diagnosis

In the phase following the epidemiological diagnosis, program planners and policy makers should attempt to identify controllable or preventable factors related to suicide. These should be assessed to identify those that deserve priority. Program planners must examine the relations among lifestyle, behaviour,

environment, and suicide as identified in the epidemiological diagnosis. In the behavioural and environmental diagnosis, the possible 'channels for change' in suicidal behaviours are identified. These may be conceptualized as *individual*, *lifestyle*, and *environment*. Lifestyle factors are in many ways the linchpin which link the individual to his or her environment. Environmental factors may include non-behavioural, physical hazards, or conditions.

BEHAVIOURAL DIAGNOSIS

A variety of means for committing suicide are used and differences exist across indigenous populations. Among Canadian Indians, the most frequent means of committing suicide are firearms and drugs, while among the Inuit they are hanging and firearms.²⁹

ENVIRONMENTAL DIAGNOSIS

Environments are considered by examining their cultural, physical, and socioeconomic aspects and their implications for lifestyles of indigenous adolescents. Consideration of such factors provides the context for adolescent suicide. Data on various factors existing in the cultural, physical, and socioeconomic environment provide some evidence as to the potential strength of their relations to adolescent suicide. Because adolescents are profoundly affected by their parents and families, the following section(s) examine environmental factors for the overall family constellation.

CULTURAL ENVIRONMENTS

The role of cultural integration as a cause of suicide was first recognized in 1897 by Durkheim who noted that suicide rates varied inversely with the degree of integration into social groups.⁵⁹⁻⁶⁴ A lack of social integration occurs frequently among indigenous persons whose traditional culture has been disrupted.⁶⁵ Such disintegration is more common among those tribes who have been deprived of their traditional means of livelihood: in hunting and traditionally warrior tribes confined to reservations.⁶⁶ The similarity of suicide rates between Navajo and Apache tribes is consistent with this interpretation. As a result of the breakdown in tribal traditions, adolescents experience a lack of identity as they are no longer part of an integrated tribal culture nor are they part of the mainstream culture. Lack of identity leads to feelings of isolation. These feelings of social isolation are exacerbated by pressures to succeed in the alien Anglo-Saxon community. Those who succeed in either the academic or sporting arena in mainstream society may be rejected by their tribe for failing to adhere to the norm of anonymity.^{4 66 67}

The role of cultural factors is demonstrated in a study of the Wind River tribe, where nomadic buffalo hunters were forced to become farmers and ranchers.⁶⁸ During 1985, the suicide rate temporarily reached a high of 300 in 100 000 in what has become known as a

suicide epidemic. Adolescents already experiencing a conflict between their childhood and adult roles faced additional stresses: (1) Indian male adolescents were isolated, being victims of prejudice by the white community and devoid of an Indian cultural background; (2) the Indian cultural norm of presenting a passive, composed exterior, prompted a major conflict between the inner turmoil and the presented public persona; (3) high unemployment and poor living conditions led to hopelessness; and (4) due to the small numbers in the community and the interconnectedness of the population, any suicide served as a role model for others.

Changes to traditional marriage patterns create further stresses. Changes in the tribal structure of the Hopi Indians have led to an increased tendency for marriages to occur outside the tribe. Individuals in such marriages often become disassociated from their tribe leading to a lack of the social support usually provided by the family and tribe. Children of these marriages can become culturally disinherited, leaving them too without social support.⁶⁹ Similarly, children who are adopted often become culturally dispossessed, especially at adolescence, when they discover that they are not accepted by the adopting Anglo community and have lost all ties with their tribal community.^{4 70} Thus, in psychological terms, the cultural environment increases the problem for native adolescents, in that they experience the conflict of identity versus role confusion in two arenas^{71 72}: (1) as adolescents between the worlds of childhood and adulthood; and (2) as natives between the tribal culture and the mainstream culture.

FAMILY ENVIRONMENT

Suicide has been described as being the product of a three stage process: (1) a history of problems throughout childhood and adolescence; (2) escalation of the problems during adolescence; and (3) a rapid breakdown of contacts with family and peers leading to social isolation.^{34 35 51 73} Families contribute to suicide through their contribution to the level of stress experienced by the adolescent and their failure to provide social support.⁷⁴ Given that the majority of indigenous suicides are among adolescents, the role of the family environment may be more crucial in these groups than among Caucasians.⁷⁵

Studies focusing on different native populations are consistent in showing that those who commit suicide differ from those who do not in that they are more likely to have: (1) lost one or both parents through death, divorce, or separation^{4 9 76}; (2) had more diverse caretakers⁷⁶; (3) adoptive or foster child status^{4 44}; (4) experienced physical or sexual abuse⁴; (5) lack social support of immediate family members^{9 52 54 74}; (6) have immediate family members or close friends who have committed suicide^{4 44}; (7) are concerned about parental drug use⁵³; and (8) generally experience increased levels of family disruption.⁵¹

Similarly, difficulties with school are more

common among natives who commit suicide. They are more likely to have: (1) poor school records^{9 10 49}; (2) attended a boarding school⁷⁷; (3) not liked school⁵²; or (4) been transferred to a large school with its associated anonymity and removal from their adolescent peer group.⁴ Among American Indian and Alaskan Native adolescents in boarding schools, depression and related problems are common.⁷⁷⁻⁷⁹

PHYSICAL AND SOCIOECONOMIC ENVIRONMENTS

The lands allocated to reservations, whether in the United States, Canada, or Australia are generally the more remote and least economically viable and unwanted areas.⁸⁰⁻⁸² As a consequence, indigenous communities are frequently characterized by many of the features that are common to remote rural communities including isolation; geographical distance; limited communication; high levels of self treatment; self reliant attitudes towards health; anti-intellectual attitudes; a strong sense of community; and poverty.^{7 62 83 84} The physical environment has a major impact on social and economic opportunities.⁸⁵⁻⁸⁸

The role of the economic climate in suicide was recognized by Durkheim when he argued that suicide rates increase in times of economic recession and decrease in times of prosperity and war.⁸⁹ The relationship between socioeconomic factors and suicide has been documented. Suicide relates to unemployment^{59 84}; lower socioeconomic status^{1 84 88}; a high incidence of financial concerns⁶⁸; northern latitude (in the northern hemisphere)⁸⁴; and distance from the nearest town.⁸⁴ During times of economic recession there is little opportunity for work, leading to feelings of helplessness and hopelessness that are alleviated by alcohol and drugs.^{52 90-93} Girls may have some incentive to become unwed mothers as this leads to an increase in their welfare payments. In these cases, the resolution of one problem creates another. Children living in poverty or those whose families have recently been unemployed are more likely to be abused and to develop a low self esteem.^{84 94-97}

As a result of these socioeconomic conditions, many adults have spent their entire life living on welfare and are unfamiliar with alternatives, seeing little need to work for wages when they are receiving money for not working.⁹⁸ Living on welfare leads to the development of feelings of hopelessness, which are often alleviated by resorting to alcohol and other drugs that are, in turn, precursors of increased risk for suicide.⁹⁹

The economic position of indigenous persons is evident from a consideration of unemployment rates. Estimates of Indian unemployment range from 35% to 75% of the labour force.¹⁰⁰ It is claimed¹⁰¹ that any assessment of socioeconomic conditions leads to the conclusion that the Canadian Native Indians are the most destitute group in Canada, with 75% living below the 'poverty line'. They earn 21.3% of the Canadian average wage, 25% have no formal schooling,

and 70% are unemployed—10 times the national average.

Indians living on reserves had an employment rate of 28.2% compared with a rate of 36.8% for off-reserve Indians. In 1986, 28.2% of Indians living on reserves had never worked for wages. When these people are employed, they tend to be in the hardest, most menial, and/or lowest paid jobs.¹⁰² Relative to the general population, Canadian Indians in urban areas also have a lower level of formal education, a higher rate of unemployment, a greater dependence on welfare, and are more frequently transient. Indigenous city dwellers face jurisdictional difficulties, often falling down the cracks between the relevant support services and authorities.^{85 86 103}

There may be sex differences in the role of economic factors in suicide, with males being more affected by unemployment. In the general population, the relationship between the suicide rates and unemployment rates in Australia for the period 1907-90 showed that female suicide rates were relatively constant, while male rates fluctuated with unemployment levels, the relationship being strongest for 15-24 year old males.¹⁰⁴

Educational and organizational diagnosis

The division of determinants of outcomes into predisposing, enabling, and reinforcing factors usefully organizes the planning of potential interventions according to the previously identified major channels of influence (individual, lifestyle, environment) that can be mobilized for change. These categories are defined by Green and Kreuter as follows:

Predisposing factors include knowledge, attitudes, beliefs, values as antecedents to suicidal behaviour that provide the rationale or motivation for behaviour.

Reinforcing factors include social support, behaviour of peers, caregivers, professionals, and significant others. These factors subsequent to (attempted suicidal) behaviour provide the continuing reward or incentive for the behaviour and contribute to its persistence or repetition.

Enabling factors include skills, availability and accessibility of resources. They are antecedents to (suicidal) behaviour that enable a motivation to be realized.

PREDISPOSING FACTORS

The suicide decision is rarely impulsive. Often adolescents have considered suicide and have developed a plan over a long period of time, but the actual implementation of the plan may be triggered by a single event,³¹ such as a break-up with a partner.⁴⁴ In many cases, suicides occur in 'clusters' with the suicide of an adolescent native male triggering other suicides in the immediate area.¹⁰⁵⁻¹⁰⁸ Many researchers have also attempted to identify personality or family characteristics associated with suicide. Indigenous adolescents who commit suicide frequently have: (1) made previous suicide attempts⁵²⁻⁵⁴; (2) a history of mental ill-

ness,^{50 54}, especially depression^{23 78-79 109}; (3) one or more emotional problems requiring professional help⁵⁰; (4) low self esteem resulting from chronic illness or disease⁴; (5) feelings of hopelessness and stress⁵²; (6) high levels of interpersonal conflict⁵⁴; (7) poor interpersonal communication skills⁵²; (8) dependence on others^{23 49 77 110}; (9) an inability to delay gratification^{9 10}; (10) caused a pregnancy; and used alcohol^{9 10} and other drugs.^{49 52 111}

REINFORCING FACTORS

In considering reinforcing factors, a distinction must be made between factors that reinforce the likelihood of suicidal behaviour, and those that may reinforce or support alternative, positive coping behaviours. Depression and suicide are associated with each other and with the absence of positive influences.¹¹² The environmental diagnosis suggest that native persons are less likely to experience the positive rewards associated with success in school or a job that is common in the dominant culture.

ENABLING FACTORS

Suicides may be fostered by the presentation of violence and suicides on television and the ready availability of firearms and alcohol. The extensive general population literature examining the relationship between viewing television violence and the exhibition of aggressive behaviour supports the hypotheses that the viewing of violence leads to a desensitization to the negative effects of violence, the greater acceptance of violent normative behaviour, and the modelling of new forms of violence.¹¹³ As native adolescents are more likely to be unemployed, and have more time to view television, they are likely to be exposed to more violence than persons in full time employment. Studies of the specific effects of viewing suicides on television lead to the conclusion that stories of real suicides have a major effect on the frequency of suicide in the surrounding geographical area immediately after the broadcast,¹¹⁴⁻¹¹⁶ although there is some doubt about the modelling effect of fictional suicides.^{117 118}

Firearms increase the likelihood of successful suicides. In 1988, 1372 American adolescents aged 13 to 19 used firearms to commit suicide. The problem is not restricted to handguns, as rifles and shotguns can be more lethal weapons than handguns. In the absence of firearms, adolescents may find it more difficult to commit suicide.¹¹⁹ For example, in a case-control study of 47 suicide victims, 47 parasuicides and 47 controls, it was found that guns were twice as frequently found in the homes of the suicides as in the homes of the parasuicides or controls.^{120 121} The availability/accessibility of firearms may enable suicidal behaviour.

Alcohol can have a number of different effects. It may lead to rejection from the family or tribal group. As a depressant drug, alcohol use may precipitate a predisposition to suicide. Research is consistent in showing that suicide is related to abuse of alcohol.^{50 52 54 69} Although

the relationship between alcohol use and suicide among indigenous persons is commonly found, the interpretation of this relationship requires careful consideration, as the role of alcohol in depression and suicide is perceived differently by indigenous adolescents than by non-indigenous researchers.¹²² Within Australian Aboriginal communities, alcohol has had a major impact in the high prevalence of suicide. Since the use of alcohol by Aboriginals was legalized there has been a change in attitudes and expectations relating to alcohol, with excessive drinking being seen as a normative behaviour and many fathers are absent due to drinking. Frequently, these are the families where suicides are more common.³⁶ Alcohol may also underlie many offences for which Aboriginal persons are incarcerated, thus having an indirect effect on the numbers of Aboriginal suicides while in police custody.¹²³⁻¹²⁶

Administrative and policy diagnosis

Whatever the choice of channel or target/strategy of change, any health promotion program that hopes to change suicide related behaviours, lifestyles, or the environment must also undergo an administrative and policy diagnosis. At this stage, the program planner and program participants must assess the challenges, barriers, and obstacles to successful program implementation. People often point to the apparently abundant financial resources which governments make available to indigenous programs. Many communities are unaware of their existence however, or of the means of tapping them. Professionals attempting to assist in the development of programs are generally members of the dominant culture and often fail to understand the nature of native culture(s).⁹⁸ For example, programs attempting to improve or ameliorate the socio-economic conditions of indigenous persons have common difficulties. Financial resources available to develop industries seldom result in development of on-going industries to provide employment because the funding usually comes in the form of short term grants requiring short term visible benefits. This means that work projects are *ad hoc*, starting when there is funding and ceasing when the funding ends. Leaders are under pressure to produce visible effects with available funding leading to a focus on short term results at the expense of long term or culturally sensitive planning.⁹⁸ As professionals are usually only short term residents in the community, they often lack a longer term perspective and an awareness of local concerns.

Further, projects designed to meet the requirements of the funding bodies, rather than those of the community, are often not sustainable. Competition between different programs for limited resources⁸⁰ may lead to fragmentation of resources that might be used more effectively if allocated on a community, rather than a program, basis. Funding requirements lead to the development of programs imposed by professionals rather than those

developed by the communities to meet their own needs. The problem is exacerbated by the belief that projects should have measurable outcomes, whereas, for short term projects, it would be more realistic to focus on process evaluations. Any community behavioural change occurs gradually over time, with successive increments of change needing to take place before there are assessable differences in mortality or morbidity.

This approach contrasts with the exceptional situation in the North Island of New Zealand³² where there is an emphasis on the importance of the Maori culture as a major source of tourist revenue. Many Maoris have stable jobs in the tourist industry where they use their cultural heritage to provide crafts and entertainment. Through the tourist industry their cultural heritage is being preserved and respected, and a sound economic base is being developed. Consistent themes emerge in relation to the administrative and policy diagnosis, although the evidence is more sparse and less clearly documented than that relating to other areas. Interventions are more likely to be successful if they are conducted on a community basis, on the initiative of the members of the community, and owned by them.

Conclusion

There is an extensive literature addressing different aspects of the environment of native persons. The consistency across continents supports Durkheim's observation that social environments are a major, if not the major, factor underlying suicide. Some social conditions are associated with a set of psychosocial factors that are in turn related to suicide. As there are more indigenous than non-indigenous persons who experience these social conditions, there are more indigenous persons reported as suicides. However, the causal variable is the social conditions of the people whose suicidal behaviour is being assessed, not their racial origins *per se*.

Indigenous persons are more frequently located in the lower strata of the social hierarchy than non-indigenous persons. This position in the social hierarchy has two types of effects: first, it influences social opportunities in relation to objective indices such as educational opportunities, employment opportunities, and disposable income; second, it influences the individual's self perception and hence their self esteem. Thus the environmental factors underlying suicide involve the position in the socioeconomic structure and cultural disintegration, both of which are a product of the impact of European settlement and the resultant relocation of indigenous persons onto selected, poorer areas, as well as the lack of recognition of the validity of their cultural heritage.¹¹⁵

These factors may combine to negatively effect family cohesiveness and the development of self worth. Thus any assessment of the role of behaviour, lifestyle, and environment in aboriginal suicide also needs to focus on the relations between indigenous cultures and the

acculturation of natives to the predominant Western culture. Although there is more research in relation to the United States than Canada, Australia or New Zealand, the patterns which occur across these different peoples have sufficient similarity to conclude that suicide is more common among adolescent males than other sections of the community. Many of the factors underlying native adolescent suicide can be connected to the undermining of native culture and the placing of indigenous adolescents in physical, social, and economic environments which provide few expectations of positive outcomes.

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